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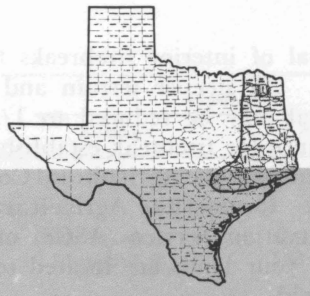

L-923

KEYS TO PROFITABLE TIMBER PRODUCTION

W. A. Smith and D. W. Fate*

East Texas' 11.5 million acres of forestland annually produce $100 million worth of timber for wood-using firms. These firms provide additional income for the State's economy through processing, distribution and marketing of wood products. This places the forest industry's total contribution to the Texas economy well over $1 billion annually.

Pine and hardwood volume on each Texas forest acre is about 800 cubic feet. This is compared to a possible 2000 cubic feet on a well-stocked acre. In the past 10 years, pine volume has increased nearly 40 per cent, but hardwood volume has dropped over 10 per cent.

Annual per acre yields for pine on uplands is about 300 to 500 board feet, with an average gross value of $10 or more for logs, poles and pulpwood. Hardwood timber on bottomlands has an annual per acre yield potential of up to 700 board feet per acre with gross returns averaging $20 or more for veneer and sawlogs, ties and pulpwood.

Soil differences cause yield variations for pine and hardwood. Use recommended forest practices to achieve the best possible timber production and profits.

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Disk or plow firebreaks along property boundaries, through tree plantations and next to timber stands.

County Timber Growing Recommendations

Firebreaks—In **April** plow or disk firebreaks 6 feet wide along property boundaries, through tree plantations and next to timber stands. Rework in **October.** Plow or disk under all natural fuels such as grass, weeds and leaves before or during periods of high fire danger. Provide interior firebreaks in large stands. In older stands on flat terrain the

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interval of interior firebreaks may be 1/8 mile or more. On steeper terrain and seedling areas the interval may be reduced to 1/16 mile. Financial assistance for firebreak establishment may be available through the Agricultural Conservation Program (ACP). Contact the Agricultural Stabilization and Conservation Service (ASCS) office in the county where your lands are located to learn more about ACP aid.

Insects and Diseases—During growing season **(April through October)** make two or three checks to locate sick trees. Determine cause and begin control measures immediately. Quickly salvage harvest trees attacked by one of the bark beetles—Southern pine, Ips or turpentine—where feasible. If not feasible, spray green-topped or slightly faded trees containing living broods with benzene hexachloride (BHC). Formulation and application methods for BHC are available from Texas Forest Service district offices.

Pine tip moths kill buds and twigs of young loblolly and shortleaf pines and rarely attack slash and longleaf. No practical chemical control is available, but damage generally is not lethal.

Fencing—Maintain fences during **entire year** to regulate cattle and exclude sheep and goats from young pines and to exclude all livestock from hardwood stands.

Planting—In **June to November** obtain application form for ordering generally 680 seedlings per acre on average sites at a spacing of 8 x 8 feet. You may consider 8 x 10-foot spacings (544 trees) on better than average sites or 6 x 8-foot spacings (908 trees) on poor sites. Prospective planters may get a wide variety of planting stock by applying to the Texas Forest Service through their district offices.

Loblolly pine is adapted to most upland soils, has a good growth rate, is in high demand for all timber products and is the best species for planting under hardwoods. Improved loblolly seedlings are expected to increase timber production. Drouthhardy loblolly seedlings will survive dry conditions. Slash pine has a rapid rate of early growth and is adapted to extremely wet flats and sandy hill sites. It is subjected to heavy ice damage and has dropped slightly in demand for pulpwood. The seed production area slash pine planting stock has shown fast growth and good form. Improved slash seedling are produced from seed collected from genetically improved trees in a seed orchard.

Shortleaf pine is suitable for planting on drier sites in Northeast Texas. Check on financial assistance available through the ASCS office in the county where your land is located.

Quick salvage harvest of pine timber attacked by one of the bark beetles is the best means of controlling these pests.

In **August through December** prepare the planting site with firebreaks, scalp heavy sod and control cut ants with mirex ant bait or methyl bromide. Scatter mirex over colonies where ants will pick it up and carry it into their colony for later feeding. Control gophers with poison grain. Establish fences to exclude cattle for at least 2 years and sheep and goats for at least 5 years. In **mid-December through February** plant seedlings slightly deeper than grown in nursery by hiring a machine planter or using a planting bar. Make certain roots are straight in the opening. Carry seedlings in a container covered with wet moss. Heel-in unused seedlings until next planting.

Timber Stand Maintenance—During **entire year** control weed trees in both pine and hardwood stands by first selling marketable trees and deadening remainder with metered tree injector and concentrated 2,4-D amine or unmetered injector and 2,4,5-T with diesel oil. Contact local ASCS office on possible financial assistance.

Mid-June through August thin crowded pine stands by marking crooked, diseased and slow-growing trees and spraying pine stumps with agricultural grade urea (45 percent nitrogen) in a water solution or sprinkling powdered borax on stump tops within a few minutes after cutting to control *annosus* root rot. **November through March** use prescription burning, with expert help, to control small woody plants under 4 inches in diameter at breast height in pine stands. **December through March** prune 100 to 200 pines less than 6 inches in diameter on each acre using a pruning saw (not an ax) to remove no more than a third of the entire live crown to 8 feet in height to improve stem quality. Later prune to 17 feet.

GROSS ANNUAL TIMBER INCOME — PER ACRE BASIS

	Pine-Hardwood		Hardwood	
	Average	Potential	Average	Potential
ANNUAL TIMBER GROWTH				
Pine Sawtimber	100 board ft.	250 board ft.		
Hardwood Sawtimber	20 board ft.	10 board ft.	200 board ft.	525 board ft.
Hardwood Veneer			25 board ft.	175 board ft.
Pine Pulptimber	1/7 cord	1/2 cord		
Hardwood Pulptimber	1/13 cord	1/13 cord	1/4 cord	1/2 cord
Pine Poles		1/2 pole		
ANNUAL TIMBER RETURNS				
Pine Sawlogs @ $35/M	$3.50	$ 8.75		
Hdwd. Sawlogs @ $15/M	.30	.15	@ $20/M - $4.00	$10.50
Hdwd. Veneer @ $40/M			1.00	7.00
Pine Pulpwood @ $3.50/cord	.50	1.75		
Hardwood Pulpwood @ $1.50/cord	.12	.12	.38	.75
Pine Poles @ $4.50/pole		2.25		
Total Per Acre Gross Returns	**$4.42**	**$13.02**	**$5.38**	**$18.25**

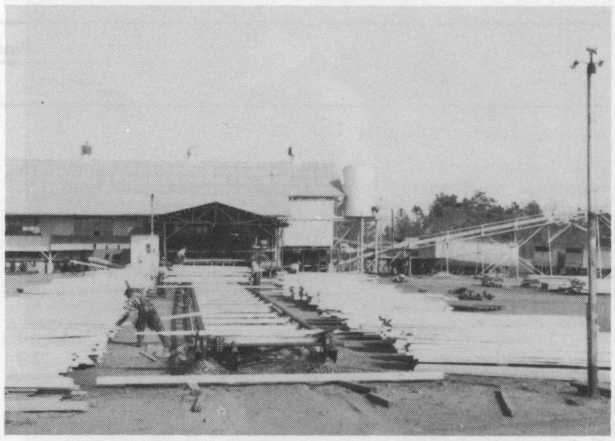
Timber Marketing—During **entire year** maintain contact with timber buyers to determine prices paid and volumes needed. Generally, best prices are available during winter months, especially on sites which can be logged readily. Where possible, combine sales with a neighbor to increase volume. Mark and estimate timber by-products to be cut. Use a written agreement; sell for the highest valued product first. These include veneer, poles and piling, sawlogs, X-ties and then pulpwood. Sufficient volume of a given product must be available to justify moving logging equipment in to harvest. This usually means 2 to 3 cords of pulpwood per acre or 800 to 1,000 board feet of sawtimber per acre.

Marking and estimating timber by the forest products to be removed in a thinning operation is an important step in a profitable timber sale.

Planting pine seedlings may help accelerate reforestation and increase the productivity of timber stands. Two East Texas youths demonstrate hand planting techniques by using a planting bar.

***Timber Harvest*—Mid-June through August** improvement cut marked pine stands to remove crooked, diseased and crowded trees. **Immediately use urea or borax on stumps.** For the **same months** use seed tree and shelterwood cuttings to harvest pine marked for poles, sawlogs and pulpwood. Treat stumps with urea or borax. Increased mechanization and high labor costs necessitate row thinning of pine plantations. Timber buyers may propose a variety of methods from two out of four rows to one out of seven rows. Heavier thinnings by this method, that is two out of four or every other row, are suitable in plantations with good, uniform survival, minimum of forked trees and minimal pest damage such as "cronartium" disease. Many plantations will be more adequately thinned by removing one out of four rows and then using improvement thinning in the remaining three rows. In this method no trees marked for improvement thinning are more than one row from the thinned row. During the **entire year** use improvement-cut on hardwood timber without stump treatment. During the **entire year** use group selection cutting for hardwood timber to harvest all salable trees on areas at least 1/4 acre or larger to speed up reseeding. Repeat group cuts at 5-year intervals throughout the stand.

These publications are available from county Extension offices, forestry specialists or Texas Forest Service district offices:



Southern yellow pine is sorted by size and grade at an East Texas sawmill.

Selected Timber Production References

1. *Suggestions, Weed Control with Chemicals*
2. *Brush Control with 2,4,5-T*
3. *How to Plant Forest Tree Seedlings*
4. *Growing Hardwood Trees for Market*
5. *Annosus Root Rot*
6. *Pine Bark Beetles*
7. *Managing the Family Forest*

Cooperative Extension Work in Agriculture and Home Economics, Texas A&M University and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8, 1914, as amended, and June 30, 1914.
20M—12-70, Reprint FOR 2